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Lucky Pennies and Four Leaf Clovers: Young Children's Understanding of Superstitions

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LUCKY PENNIES AND FOUR LEAF CLOVERS:

YOUNG CHILDREN'S UNDERSTANDING OF SUPERSTITIONS

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The development of organized, explanatory systems of knowledge is an integral part of human nature; it allows us to categorize objects and events and to make predictions based on our experiences. In our society, the quest for answers to the questions "How?" and "Why?" begins early in life. By the preschool years, children are actively seeking and providing explanations for an abundance of physical and social events, and they are developing knowledge of causal forces at work in the environment (Bullock, Gelman, & Baillargeon, 1982; Rosengren & Hickling, 1999).

Paradoxically, at about the same age at which children demonstrate they have a fundamental understanding of natural causal forces operating in the world, they are introduced by our culture to concepts and beliefs that seem to contradict their early theories. For example, children learn of popular superstitions (e.g., a four-leaf clover bringing good luck) that employ causal mechanisms outside the realm of natural laws governing the physical world. This concept raises the question of whether or not children with a fairly sophisticated understanding of normal causal forces believe in superstitions and, if so, how they reconcile these supernatural beliefs with their knowledge of natural causal relations.

The aim of this study was to examine young children's understanding of superstitions. Children between the ages of 5 and 9 received a set of interview questions concerning their experiences with superstitions (e.g., "Do you know what a superstition is?"); their beliefs about the efficacy of superstitions (e.g., "Do superstitions always come true or just some of the time?"); and their knowledge of the mental and physical components of superstitions (e.g., "Do you have to believe it will come true for it to really happen?"). Participants also completed a belief task designed to assess the relative importance of belief and action in superstitions.

The findings indicate developmental patterns in children's awareness of superstitions and beliefs in efficacy of superstitions. With age, children demonstrated a significantly greater awareness of superstitions. In contrast, children demonstrated a significant decrease in beliefs in the efficacy of superstitions by the age of seven. Regarding children's perceptions of the necessary components of superstitions, there were important similarities in the developmental pattern of children's responses. Across all age groups, the action component of a superstition (as opposed to the belief component) was found to be the primary factor in the effectiveness of superstitions to "bring good luck." These findings are discussed in relation to children's beliefs about magic, wishing, and prayer, and the potential modes of cultural transmission of supernatural beliefs.

Literature Review

An essential element of human nature is our quest to make sense of the world. Individuals search for explanations about everything from the creation of the earth to why the Yankee baseball pitcher pitched a no run game. Was it the wind? Was it his lucky socks? Was it God? In our society, scientific evidence has been hailed as the most accepted method of interpreting our wondrous world. Both children and adults call on scientific reasoning to predict and explain events in their environment. Through science, "we aim for objectivity: basing conclusions on external validation. And we avoid mysticism: basing conclusions on personal insights that elude external validation" (Shermer, 1997, p. 20).

At what point do young people begin using science as a means for explaining events in the world? Research demonstrates that this knowledge can be present even in early childhood. In fact, a growing body of empirical work documents children's understanding of the scientific processes that function in the world. For example, studies done by Leslie and Keeble (1987) and Cohen and Oakes (1993) indicate that even infants have a general understanding of physical causality. These studies systematically investigate infants' perceptions of causality by presenting direct launching events in which one object moves across a computer screen and hits a second object. The results suggest that infants as young as 7 to 10 months of age demonstrate an ability to recognize causal relationships among objects. Further research documented how preschoolers use

their scientific knowledge of physical causality to predict and explain a multitude of events (Bullock, Gelman, & Baillargeon, 1982; Goswami, 1991; Shultz, 1982).

With such evidence of children's basic understanding of scientific principles, the questions arise as to when and why children use magic as a causal explanation of events. Magical forces not only fall outside the realm of natural causality but also violate children's early scientific principles. To better understand the interplay between magical and scientific reasoning, it is important to first define and explore the magical belief systems prevalent in our culture.

Oxford American Dictionaries (Abate, 1998) defines magic as being "a supposed act of influencing the course of events supernaturally" (p. 359), and defines supernatural as "thought to reveal some force above the laws of nature" (p. 601). According to these definitions, magical belief systems may include -- but are not limited to -- wishing, astrology, numerology, and superstition. Such belief systems have existed for many centuries; for example, the superstitious act of knocking on wood to promote a positive outcome is thought to have first originated in Ancient Greece. Men of this time believed that trees housed spirits and sought protection from evil by touching a tree (Marmor, 1956).

In America today, evidence of magical beliefs dominate our popular culture (Gmelch & Felson, 1980; Rozin, Nemeroff, Wayne, & Sherrod, 1989). Vyse (2000) notes that 1200 of the 1750 newspapers distributed throughout the nation include astrological columns, and Gallop polls from 1994 report that 25% of Americans believe in astrology. In addition, a multitude of television programs and movies, such as the *X-files*, *Ghost*, *Phenomenon, City of Angels,* and *The*

Sixth Sense, focus on paranormal forces such as aliens, ghosts, or Extra Sensory Perception. This pervasive climate of magical and supernatural beliefs may have direct consequences on the development of magical beliefs in children.

Recently, a number of investigators have focused on children's magical beliefs and their use of magical explanations. Regarding children's beliefs in magical entities, parental reports as well as verbal and behavioral measures of young children's beliefs indicate that many children between the ages of 3 and 8 believe in magical beings such as Santa Claus, the Tooth Fairy, the Easter Bunny, ghosts, and monsters (Harris, Brown, Marriot, Whittall, & Harmer, 1991; Johnson & Harris, 1994; Rosengren & Hickling, 1994, 1999; Woolley, 1999). In addition, another recently documented phenomenon involving magical beliefs is that of children's imaginary companions. Estimates of the frequency of children having imaginary companions range between 25% and 65%, with the highest incidence occurring between 3 and 8 years of age (Singer & Singer, 1990; Taylor, Cartwright, & Carlson, 1993). This information suggests a fundamental difference between the way children and adults perceive the realm of magic.

However, when we look at the way in which children and adults use magic as a causal explanation for real world physical events, the evidence indicates that both adults and children resort to using magical explanations for events when they have no apparent physical or scientific causal explanation. In a study by Phelps and Woolley (1994), children between the ages of 4 and 8 were given a magical belief interview and a series of event tasks. Data from the interview showed an age-related decrease in children's beliefs in the real existence of magical entities

(such as fairies) and magical powers. The event task was broken into two parts: prediction and explanation. In the prediction section, children were asked to guess what might happen in a particular scenario (e.g., magnets repelling one another, a quarter "disappearing" in a box). In the explanation section, children were shown the event about which they made a prediction and asked to explain the cause of the event. There were four predictive variables: age; magical belief classification (high, moderate, low--based on the interview responses); accurate predictions; and availability of accurate physical explanations. Of the four variables, only the final factor, that of having reasonable physical explanations for the events, was found to account for a significant portion of the variance in children's claims of magic. Thus, whether or not children claimed to believe in magical entities and supernatural forces in the interview did not relate to their use of magic to explain physical events. According to this study, children are similar to adults in that when they have physical principles available to explain events they do not make use of magical explanations.

So there appears to be a discrepancy between children's beliefs in magical entities (which are numerous and robust) and their beliefs that magic is a force operating in the real world (which is limited). In line with this difference, an additional distinction needs to be made between what children call "magical" and children's beliefs and actions that we, as adults, may call magical because they violate our understanding of natural causal forces. Piaget (1929) defined children's "magical thinking" from this adult perspective as a broad category of mental and physical acts that include several sub-categories: (a) "magic by

participation between thoughts and things" (e.g., wishing for a new bike and getting one); (b) "magic by participation between actions and things" (e.g., crossing your fingers and winning a lottery); and (c) "magic by participation between objects" (e.g., finding treasure buried under a four leaf clover). According to Piaget, young children routinely engage in these forms of magical thinking involving a misinterpretation of the underlying causes of physical events. These forms of magical thinking have less to do with the "fairy and monster" realm of magic than they do with wishing and superstitions.

Several recent developmental studies have focused on Piaget's first category of magical thinking, "magic by participation between thoughts and things." These studies address children's beliefs in the power of mental-physical causality -- that is, a mental act (e.g., imagining, wishing, or praying) having a physical consequence in the real world. Conceptually, imagining, wishing, and praying have a number of features in common, the most important being that they all involve internal mental processes aimed at changing the external world in some way.

Woolley and Phelps (1994) investigated young children's understanding of imagination as an effective means of mental-physical causality. Forty-two children between the ages of 3 and 5 participated in a task that included a verbal and behavioral measure of their beliefs in the real existence of an imagined object. The procedure involved having a child imagine or "make a picture in their head" of an object inside an empty box. Children's belief in the existence of this object were assessed verbally ("Is there tape in this box?" and "Is it real tape or pretend

tape?"), and also behaviorally by testing if the child would hand the box with the imagined object to an adult in need of the particular object. Results show a difference between the beliefs and actions of young 3-year-olds as compared to older 3-year-olds and 4- and 5-year-olds. Young 3-year-olds were more likely to verbally affirm the existence of the imagined object in the box and to actually hand over the box to the experimenter. However, a significant majority of all subjects (ages 3-5) displayed a clear understanding of the nonexistence of the imagined contents when assessed behaviorally. Woolley and Phelps (1994) suggested that children under 4 years of age might experience confusion about whether imagining or thinking can actually change physical reality.

Woolley, Phelps, Davis, and Mandell (1999) explored the connection between mental acts and the physical world in a second type of magical causality - wishing. In a two-part study involving 92 children between the ages of 3 and 6, the researchers assessed children's beliefs in the efficacy and magical nature of wishing. In one task, children were asked to state whether events were magical or ordinary. The events included commonly portrayed magical events (e.g., frog turning into a princess) and nonmagical events (e.g., flipping on a light switch and a light coming on). Children also were asked if a wish coming true would be magical or not magical. Results indicate that older children (5- and 6-year-olds) classify wishing as a magical event, as do the younger children (3- and 4-year-olds); however, the majority of young children also purport that turning on the light is magical. In accord with the findings from the magical belief study by Phelps and Woolley (1994), when children are not equipped with scientific or

physical explanations, they may be more likely to claim the event is magical. Overall beliefs in the efficacy of wishing decreases in children between the ages of 3 and 6.

A third form of mental-physical causality that has received recent attention is prayer. Prayer is similar to imagining and wishing in that the objective is to alter the world through a focused thought, but with prayer, there is the added element of a divine intermediary, such as God. In a study by Woolley and Phelps (2001), 3- to 8-year-old children were asked structured interview questions and instructed to respond to tasks designed to assess their concepts of prayer. Children were asked questions such as "How does God hear your prayers?" and "Who makes your prayers come true?" In one task, children were asked to teach a puppet how to pray. Researchers examined the mental and physical components children reported as characteristic of prayer (e.g., bowing head, clasping hands, thinking). The results support a clear developmental trend, with 3- and 4-year-olds claiming the physical aspects of prayer (closing eyes) are more important than mental ones (thinking), and 7- and 8-year-old children claiming that mental components are more important than the physical ones. Concerning beliefs in the efficacy of prayer, at age 4, children begin having a general idea that prayer "works" and this belief appears to increase through age 8.

Very little research has been done to address Piaget's second and third categories of magical thinking: "participation between actions and things," and "participation between objects and objects." These forms of magic are more closely related to what we commonly view as superstitions, such as knocking on

wood or picking a four leaf clover for good luck. Tobacyk (1991) describes superstition as the tendency to create an "illusory correlation." He defines an illusory correlation as one in which people imagine or overestimate relationships between two variables. Similarly, Alcock (1995) defines superstition as "the interpreting of two closely occurring events as though one caused the other, without any concern for the causal link" (p. 15). A more culturally relativistic definition suggests "superstition should be reserved for beliefs or practices groundless in themselves and inconsistent with the degree of enlightenment reached by the community to which one belongs" (Marmor, 1956, p. 119). While this definition implies a very negative view of superstitions, it also allows for knowledge and beliefs systems to evolve within a culture.

Alcock (1995) states that 19th century thinkers believed that universal education would lead to a decrease in superstitious beliefs. However, he claims that "high literacy rates and universal education have done little to decrease such beliefs" (p. 15). Superstitious beliefs are evident in individuals with and without formal education as well as in both rural and urban areas. Vyse (2000) suggested that people with a college education may be more likely to subscribe to social and occupational-specific superstitions, such as exam or business related superstitions. Blum (1976) reported that within American society as a whole, there is abundant evidence of beliefs in many common superstitions (e.g., walking under a ladder brings bad luck, crossing your fingers brings good luck).

Why are these beliefs so prevalent in a culture that strongly supports scientific methods of inquiry and scientific explanations? Anthropologist

Bronislaw Malinowski suggests the "theory of the gap" to explain the ubiquity of superstitious beliefs and acts (as cited in Campbell, 1996). His theory states that despite our vast array of scientific knowledge, uncertainty still exists regarding the underlying causes of many events, and this uncertainty leads people to experience anxiety about the unknown. When an individual lacks control, feels uncertain, or is without information about the outcome of an event, he/she may be more prone to superstitious beliefs and behavior (Jahoda, 1969; Keinan, 1994). For example, a student who feels anxious about taking an exam may feel compelled to pick up a penny off the floor, in hopes that it will bring good luck. Similarly, a first time flyer might knock on wood after hearing a flight attendant boast of that airline's safety record. These acts permit the individual to gain some sense of control over an uncertain outcome. As Zeiler (1972) states, "superstition refers to behaviors which are emitted as if they have environmental consequences, but in fact do not" (p. 2).

A perfect example of this type of behavior is evidenced in a study conducted by Rozin, Markwith, & Ross (1990). Adult subjects were given two glasses of water. The subjects observed sugar being added into each glass and then instructed to place labels on the glasses: one read CYANIDE and the other read SUGAR. When encouraged to drink from both glasses, subjects consistently preferred to drink from the glass labeled SUGAR. Despite placing the labels on each glass themselves, people avoided the water labeled CYANIDE due to the fear of a possible link between the liquid and the poison.

As adults, these illusory correlations may be compelling, even though our rational side refutes them. Campbell (1996) utilizes the idea of a half-belief to explain this phenomenon. He describes individuals who may negate the idea of bad luck, but purposely avoid walking under a ladder. Oftentimes, he claims, people may realize that a belief is irrational or unjustifiable, yet still perform the superstitious act. If there is a high cost to performing the act (e.g., people are watching, or it is difficult to walk around the ladder in a particular setting), one is less likely to do it. However, if there is a low cost to behaving superstitiously (e.g., no one is around, or it is just as easy to walk around the ladder as it is to walk under it), people may choose the superstitious route just in case there may be some type of causal connection.

These findings in the adult literature bring into question how children, like adults, might employ superstitions in their struggle to make sense of and control their world. To what extent are children knowledgeable of superstitions? Do they view superstitions as a credible means of causality? What do children perceive to be the roles of belief and action in superstitions? The purpose of this study is to explore young children's understanding of superstitions and to further inform three areas of development: (a) children's magical beliefs and use of magical explanations, (b) children's magical thinking as defined by Piaget's three sub-categories of magical thinking, and (c) children's superstitious beliefs and acts as compared to those of the adult population. It is expected that children will exhibit knowledge of superstitions later than they demonstrate knowledge of magical entities and wishing, but about the same age as they begin forming concepts of

prayer. It is unclear at this point whether children's beliefs in the efficacy of superstitions will show a decline by the age of 9, as is the pattern with magical beliefs and wishing, or if their beliefs will continue to increase through the early elementary school years, as is evidenced with prayer.

Method

Participants

Participants in this study were 80 children between the ages of 4 and 9 with an equal number of males and females. The sample consisted of 25 4- to 5-year-olds (mean age = 5;1; range = 4;7 – 5;7), 25 6- to 7-year-olds (mean age = 7;2; range = 6;7 – 7;10), and 30 8- to 9-year olds (mean age = 9;2; range = 8;8 – 9;7). Children were recruited from two public schools. Each of the public schools used in this study serves a population of students in which approximately 67% meet eligibility for free and reduced lunch program. This study was approved by the Human Subjects Review Board of Western Kentucky University (see Appendix A).

Materials

Belief interview. The complete set of interview questions is included at the end of this document (see Appendix B). Following the interview format used in similar studies (e.g., Woolley & Phelps, 1994; Woolley & Phelps, 2001; Woolley, et al., 1999), this survey was used to address children's knowledge of and beliefs in superstitions. The subjects were given the opportunity to answer a structured format of open-ended and forced choice questions concerning superstitions. More specifically, questions probed children's knowledge of superstitions, beliefs in the efficacy of superstitious acts, and understanding of the necessary components (mental and/or physical) of superstitions. First, children

were asked, "Do you know what a superstition or saying about luck is?" (Question 1). If subjects answered this question affirmatively, they were asked, "Can you explain what it is to me?" (Question 2), and "What would be an example about something that brings good or bad luck?" (Question 3). Participants also were asked: "Do you believe that is true?" "Has it ever happened to you?" and "Did it really work?" (Questions 3a, 3b, 3c).

Children then were presented with the following sayings: "Step on a crack, break your mother's back" and "Find a penny, pick it up, all day long, you'll have good luck." Following each saying they were asked, "Have you ever heard of that saying?" "Do you think that it is true?" "Have you ever done that?" and "Did it really work?" (Questions 4a-d, 5a-d). Next, children were asked, "Can you think of any other special beliefs or sayings that bring good or bad luck?" (Question 6).

Children's concepts of luck were further explored in Questions 7 – 15: "Do you think there is really such a thing as luck – having good luck or bad luck?" "What are some examples of things that might happen if you have good luck?" "What are some things that might happen if you have bad luck?" "Can anyone have good luck?" "Do some people have more good luck than other people, or is it even? If so, then who?" "What do you have to do to get good luck?" "Can anyone have bad luck?" "Do some people have more bad luck than other people, or is it even? If so, then who?" "What do you have to do to get bad luck?"

Children were asked if they had heard of a number of objects bringing good luck (four leaf clovers, rubbing a rabbit's foot, knocking on wood, a pencil,

crossing your fingers, a horseshoe, and the number seven - Question 16a-g) and of a number of objects bringing bad luck (breaking a mirror, stepping on a spider, walking under a ladder, black cat crossing one's path, touching a window, spilling salt, and the number thirteen - Question 17a-g). Neutral items (i.e., a pencil bringing good luck and touching a window bringing bad luck) were included in the lists to insure children were not always responding affirmatively. If subjects had heard of the specific objects bringing good or bad luck, they were asked about its efficacy: "Do you think it really works?" Participants also were asked, "Do special beliefs or sayings for luck always come true or just some of the time?" (Question 18).

To evaluate children's perceptions of the mental and physical components of superstitions, they were asked, "Do you have to really believe it will work for it to come true?" (Question 19), and "When special beliefs come true, is it because somebody does something to make it come true, or because it just happens?" (Question 20).

Final items assessed whether children believed people or things (kids, grown-ups, babies, cats and dogs, flowers, and tables) can have knowledge and beliefs regarding luck (Questions 21a-f, 22a-f).

Belief task. The belief task protocol and stimuli are included at the end of this document (see Appendix C and Appendix D). The belief task was administered immediately following the interview. The main objective of this task was to determine the perceived relative importance of mental (belief) and/or physical (action) components of superstition in order for a desired outcome to

occur. Twelve scenarios were presented in random order. The characters in each scenario were engaged in one of the following behaviors: picking up a penny, picking a four-leaf clover, and crossing fingers. All three superstitions were presented in each of the following four ways: no belief/action, belief/no action, belief/action, and no belief/no action. The following were examples of one set of scenarios: "This is Juanita. She is sitting on a bench. Juanita sees a penny on heads. She does not believe that picking up a penny on heads will bring good luck. She reaches down and picks up the penny, anyway." (no belief/action); "This is Holly. She is going to school. Holly sees a penny on heads. She believes that picking up a penny on heads will bring good luck. She has to go to school, so she does not pick up the penny." (belief/no action); "This is Tony. He is walking to the park. Tony sees a penny on heads. He believes that picking up a penny on heads will bring good luck. He walks over to the penny and picks it up." (belief/action); and "This is Darren. He is going to his friend's house. Darren sees a penny on heads. He does not believe that picking up a penny on heads will bring good luck. He walks away from the penny without picking it up." (no belief/no action). As a memory check, children were asked if the character (a) believed in the superstition, and (b) performed the superstitious act. The children then were asked to predict if the character would have good luck.

Procedure

An informed consent document (see Appendix E) was distributed to potential subjects in preschool, first, and third grades. Those who returned this form received WKU pencils regardless of whether their parents allowed them to

participate in the study. Only students whose parents consented participated in the study.

Two graduate and two undergraduate students were trained on the standardized administration of the belief interview and the belief task. Prior to conducting the belief interview and task, each examiner demonstrated proficiency in testing procedures. Interrater reliability was successfully performed during practice administration sessions. The four examiners were grouped in two pairs of reader and scribe to conduct the interviews and tasks.

Within the schools, children were individually removed from their classrooms and led to a quiet area for a 15- to 20-minute session. Time was first spent establishing rapport with each subject followed by the belief interview and the belief task.

Results

Children's Awareness of Superstition

Data were omitted for two 4-year-old participants due to their inability or unwillingness to respond to the interview or tasks. In the belief interview, children first were asked, "Do you know what a superstition or saying about luck is?" (Question 1); only 22% of all children answered this question with a response of "yes." When presented with specific superstitious objects, many children reported having heard of the object bringing good luck. χ^2 analyses ($p < .05$) indicate no significant age differences for five of the seven superstitions presented. Collapsed across age, the following percentages of children claimed that they had heard of these good luck superstitions: a lucky penny, 55%; rubbing a rabbit's foot, 35%; a horse shoe, 48%; the number seven, 33%; and knocking on wood, 16%. Analyses of children's responses to the same question regarding two other superstitions indicated significant developmental differences for 5-, 7-, and 9-year olds, respectively for four leaf clovers, 40%, 92%, 97% and crossing your fingers, 52%, 88%, 97%. In each of these patterns, the responses of the 5-year-olds were significantly different from the 7- and 9-year olds, but the 7- and 9-year olds were not significant from one another (Fisher's PLSD, $p < .001$).

As a manipulation check for random positive response sets, a pencil was included as a neutral item. Twenty-six percent of all children reported having

heard that a pencil brings good luck. This high proportion of claims that pencils are lucky may, in part, be due to children's familiarity with an episode of the popular television program "Arthur" where the characters have a magic pencil. Only four of the 81 children interviewed, all of which were in the 5-year-old group, demonstrated positive response sets, in that they answered "yes" to having heard of all eight good luck superstitions. The results from questions concerning bad luck will be presented in a separate paper with a study designed to further investigate children's knowledge and beliefs about bad luck.

In order to assess children's overall knowledge of superstitions, children were assigned a total knowledge score. In questions 5a, 16a, 16b, 16c, 16e, 16f, 16g, children were asked if they had heard of particular objects bringing good luck. Children's affirmative answers were scored as 2 for "don't know," 1 for "maybe," and negative responses were coded 0 for "no." Adding the scores on these seven questions yielded a total knowledge score, ranging from 0-14. Mean total knowledge scores were 7.1, 7.8, and 9.6 for 5-, 7-, and 9-year-olds respectively. An ANOVA yielded significant main effects of age on knowledge. Post Hoc tests indicate that knowledge increases significantly between the 5- and 9-year-olds, but not the 5- and 7-year-olds or between the 7- and 9-year-olds (Fisher's PLSD, $p < .05$).

To evaluate another aspect of children's knowledge about superstitions, children were asked about which entities know about and believe in superstitions. There were no significant age differences in children's responses regarding grown-ups, kids, and tables. Across all age groups, 70% of the children report that

grown-ups know about these sayings and 53% of children claim that grown-ups believe in these sayings. Fifty-five percent of all children report that kids know about these sayings and 70% claim that kids believe in superstitions, whereas only 10% of children claim that tables have knowledge of superstitions and 13% state that tables believe in superstitions. A developmental pattern emerged regarding babies, cats and dogs, and flowers knowing about and believing in sayings for good and bad luck (See Table 1 and 2). For each of these entities and objects, there was a significant decrease in affirmative answers to both the knowledge and belief questions from the 5-year-olds to the 7- and 9-year-olds (Fisher's PLSD, $p < .001$). The older children were significantly less likely to claim that these entities had knowledge of superstitions and believed they would really come true.

Table 1

Percentage of Responses Regarding Entities Having Knowledge of Luck

	Children's Responses		
Entity	No	Don't Know	Yes
Kids			
All Ages[a]	30	15	55
Grown-ups			
All Ages[a]	20	10	70
Babies[b]			
5-year-olds	68	4	28
7-year-olds	92	4	4
9-year-olds	97	3	0

Cats and Dogs[b]			
5-year-olds	56	0	44
7-year-olds	96	4	0
9-year-olds	87	10	3
Flowers[b]			
5-year-olds	56	0	44
7-year-olds	100	0	0
9-year-olds	93	3	3
Tables			
All Ages[a]	88	3	10

[a]Age groups were combined when no significant differences were found.

[b]Decrease in affirmative answers were found from 5-year-olds to 7-and 9-year olds.

Table 2

Percentage of Responses Regarding Entities Having Beliefs in Luck

	Children's Responses		
Entity	No	Don't Know	Yes
Kids			
All Ages[a]	18	13	70
Grown-Ups			
All Ages[a]	35	13	53
Babies[b]			
5-year-olds	48	4	48
7-year-olds	80	12	8
9-year-olds	83	7	10

Cats and Dogs[b]			
5-year-olds	36	4	60
7-year-olds	84	4	12
9-year-olds	83	3	13
Flowers[b]			
5-year-olds	40	0	60
7-year-olds	80	4	8
9-year-olds	97	0	3
Tables			
All Ages[a]	88	0	13

[a]Age groups were combined when no significant differences were found.

[b]Decrease in affirmative answers were found from 5-year-olds to 7-and 9-year-olds.

Efficacy Beliefs

In addition to assessing children's knowledge of superstitions, the interview was designed to assess children's beliefs in the efficacy of superstitions – whether they would "really come true." Participants who responded affirmatively to having heard of superstitions or sayings about good luck were asked if they believed these sayings "really work" (5d, 16a2, 16b2, 16c2, 16e2, 16f2, 16g2). χ^2 analyses ($p < .01$) on children's affirmative responses indicate developmental differences for three of the seven superstitions. For the 5-, 7-, and 9-year-olds, respectively, the percentages were as follows: four-leaf clovers, 28%, 56%, 72%; rubbing a rabbit's foot, 48%, 12%, 12%; and knocking on wood, 28%, 0%, 3%. There were no significant age differences for four of the seven items,

thus the reported percentages are collapsed across the three age groups: finding a penny, 26%; horse shoe, 28%; crossing your fingers, 45%; the number seven, 20%.

For these same seven questions, a total belief score was computed by coding affirmative answers as 2, "don't know" or "maybe" as 1, and negative responses as 0, for a possible 0-14 score. Mean total belief scores were as follows for 5-, 7-, and 9-year-olds, respectively: 11.7, 9.4, 9.1. An ANOVA yielded a significant main effect of age on belief, $F(2,77) = 6.562$, $p < .01$. Post Hoc tests indicate that beliefs in the efficacy of superstitions declined significantly between the 5-year-olds and the 7-year-olds, and between the 5-year-olds and 9-year-olds, but not between the 7- and 9-year-olds (Fisher's PLSD, $p < .05$). Analyses of the belief interview questions indicate no significant effects of gender.

Necessary Components

In the belief task, children's understanding of the mental (i.e., belief) and physical (i.e., action) components of superstition were assessed. Children were presented with 12 scenarios, and after each scenario, they were asked three questions. The first two questions were intended to be manipulation checks to test whether subjects attended to the stories (e.g., "Did Juanita believe that picking up a penny on heads would bring good luck?" and "Did Juanita pick up the penny on heads?") The third question asked whether the good luck would really happen (e.g., "Do you think Juanita will have good luck?") Responses to the second question indicated children of all ages attended to the tasks (across all ages, 97% answered correctly). However, ANOVAs yielded significant developmental

differences in children's accurate responses to the first memory check question regarding the character's stated beliefs: no belief/action sets, $F(2,75) = 19.945$, $p < .0001$; the belief/no action sets, $F(2,75) = 21.510$, $p < .0001$; the belief/action sets, $F(2,75) = 6.329$, $p < .05$; and the no belief/no action sets, $F(2,75) = 3.678$, $p < .05$ (see Table 3). The youngest age group was significantly less accurate in their ability to recall the story character's stated belief in each of the four conditions of the 2(belief/no belief) x 2 (action/no action) design (Fisher's PLSD, $p < .05$). They were especially poor in recalling this information in the two conditions where action and belief were contradictory.

Table 3

Percentage of Children's Accurate Recollection of the Character's Belief

	Age Group		
Scenario	5-year-olds	7-year-olds	9 year-olds
Belief / Action	69	85	95
No Belief / Action	29	79	82
Belief / No Action	26	75	80
No Belief / No Action	69	93	95

Note. Significant differences were found between 5-year-olds and the 7- and 9-year-olds for each scenario.

Developmental differences emerged in children's responses to the third belief task question. In three of the four scenarios (belief/action, no belief/action, and no belief/no action), 5-year-olds produced significantly more claims that good luck events would occur than did 7- and 9-year old children (see Table 4). Older

children were more inclined to respond "maybe" when asked if the good luck would happen than were younger children (0%, 13%, 19%, for 5-, 7-, and 9-year-olds, respectively). In contrast to these age differences, there were important similarities in the developmental patterns of children's responses. Across all age groups, the belief/action scenarios produced the highest rate of affirmative responses (82%, 67%, 63% for 5-, 7-, and 9-year-olds, respectively), followed by the no belief/action scenarios (71%, 60%, 49% for 5-, 7-, and 9-year-olds, respectively). Scenarios with no action produced far fewer affirmative responses (belief/no action, 32%, 23%, 40%; no belief/no action, 39%, 20%, and 14%, for 5-, 7-, and 9-year-olds, respectively). Analyses on belief task data indicate no significant effects of gender.

Table 4

Percentage of Children's Claims that Good Luck Events Would Really Occur

	Age Group		
Scenario	5-year-olds	7-year-olds	9 year-olds
Belief / Action	82	67	63
No Belief / Action	71	60	49
Belief / No Action	32	23	40
No Belief / No Action	39	20	14

Discussion

The purpose of the present study is to explore the development of children's knowledge and understanding of superstitions and their beliefs regarding supernatural causal forces. The findings of this study document a growing awareness of superstitions in the early elementary years. Although some 5-year-old children were familiar with specific superstitious objects and events, there was increased familiarity with superstitions by 9 years of age. This burgeoning knowledge is exemplified by a 9-year-old's comment, "I know what good luck and bad luck is. If you find a four-leaf-clover, you get good luck. If you break a mirror, you get 7 months bad luck." The acquisition of this information may be due to a greater exposure to superstitions from parents, siblings, peers, and media.

Even though the increase in knowledge is not evident until age 9, a significant decrease in children's beliefs in efficacy appears earlier – by the age of 7. Although by this age, children still have a relatively limited awareness of superstitions, they are beginning to develop skepticism about the ability of a superstition to have an effect on the world. However, even with this skepticism, some children, like adults, still continue to consider luck a possible means of causality. As one 7-year-old explained, "Lacey has good luck because boys like her"; another claimed, "People who have money are lucky." It appears that at

times, children are more likely to use the general concept of luck than to buy into formal superstitions such as "Find a penny, pick it up, all day long you'll have good luck."

Why might children subscribe to the notion of luck? Recall that Campbell (1996) described a half-belief as superstitions upheld even though they may contradict one's rational beliefs in the chance that they have some causal effect on the world. A 9-year-old described this uncertainty by saying a superstition is "when you believe in something and it might work or not." Another 9-year-old explained a superstition's limitations by stating that it only "works on little things." With evidence of adults' half-beliefs (Campbell, 1996; Rozin, et al., 1990), it is not surprising that children would adopt this approach. One child described his reasoning for believing in the four-leaf-clover superstition as, "My dad thinks it's good luck." Evidence of this developing uncertainty was also apparent in the observed increase of the older groups' chosen response of "maybe" when asked if the character in the belief task would have good luck. No 5-year-old children answered "maybe" to this question; whereas, 7-year-olds answered "maybe" an average of 13% of the time and 9-year-olds did so 19% of the time. The older children hesitated to declare full acceptance or denial of a superstition's ability to be effective.

The results of the belief task indicate there was consistency across ages in the purported necessity of action when determining if a superstition would really occur (averaged across all three age groups: belief/action, 70%; no belief/action, 59%; belief/no action, 32%; no belief/no action, 24%). Notice that in scenarios

involving action without belief, children claimed that it would really occur over half of the time; whereas, they claimed so only a third of the time in belief without action scenarios. As adults, we frequently engage in superstitious behaviors while we concurrently admit to not believing in them (Blum, 1976; Campbell, 1996; Rozin, et al., 1990). One could speculate that the physical component of doing something - taking action - may give an individual more confidence in the outcome of an event rather than simply proclaiming a belief.

An additional goal of this research is to investigate how children's developing concepts of superstitions relate to Piaget's categories of magical thinking. Previous studies of children's concepts of imagination, wishing, and prayer (Woolley & Phelps, 1994; Woolley & Phelps, 2001; Woolley, et al., 1999) addressed Piaget's first category of magical thinking, "magic by participation between thoughts and things." The present study was specifically designed to test Piaget's second and third categories, "magic by participation between actions and things" and "magic by participation between objects and objects." In the study conducted by Woolley et al. (1999), children demonstrated an awareness in wishing as early as 3 to 4 years of age. This prevalence of knowledge in such early years was also seen in studies on magical entities and magical powers (Harris, et al., 1991; Rosengren & Hickling 1994, 1999). The present study suggests that knowledge of superstitions appears later, between the ages of 7 and 9, similar to the pattern of children's knowledge of prayer (Woolley & Phelps, 2001).

As regards children's belief in the efficacy of supernatural events, studies on children's understanding of magic (Phelps & Woolley, 1994) and wishing (Woolley, et al., 1999) suggest that children's beliefs in these processes working in the real world decrease with age. A similar pattern emerges in this study of superstitions; 7- and 9-year-olds are less likely to report that a superstition will "really work" than 5-year-olds. Interestingly, the opposite pattern was found in studies on prayer; children's beliefs in the efficacy of prayer increased through the early elementary years. Undoubtedly, this increase is a function of prayer being more strongly supported by our culture as an acceptable form of supernatural influence. It would be striking to find a culture in which superstitions were more accepted and encouraged by the adult population than religious beliefs and practices. In this case, we would expect to find beliefs in prayer being almost nonexistent and an increase with age in beliefs in the efficacy of superstitions. Most often, children's beliefs will conform to the adult norm in the culture surrounding them.

Limitations

A few limitations of this research should be noted. The order of the response choices in four of the questions in the belief interview (Questions 11, 14, 18, and 20) may have influenced the subjects' responses. The options were presented in only one order, and thus there may have been a preferred choice based on ordering. In addition, a different selection of a good luck neutral item (other than pencil) may have been more effective in identifying positive response sets. Also, the demographics of each group (SES, race, and disabilities) were not

recorded or analyzed, thus these findings may not be generalizable to the population as a whole or to specific subgroups.

Future Research

The findings from this study add to our knowledge of children's understanding and usage of magical belief systems. As evidenced by this research, children become more aware of superstitions throughout their early elementary years, but their beliefs in the power of superstitions having an effect on the world decrease with age. Most of the participants across all ages in this study rated action as the primary determinant of a superstition's effectiveness.

Additional research is needed to assess the origins of children's knowledge and beliefs regarding superstitions. What is the relative importance of parents, siblings, peers, and media in the formation of this knowledge? Regarding individual differences, is the environment the primary determinant of children's superstitious beliefs (children in the same environment have similar beliefs) or are children differentially disposed to being "believers" (given the same environmental exposure, some children will be skeptics whereas others will be credulous.) Other factors potentially related to individual differences include children's scientific knowledge, experiences with supernatural outcomes, susceptibility to peer influence, fantasy proneness, and religiosity.

Previous studies (e.g., Phelps & Woolley, 1994) indicate children have a natural proclivity to disbelieve in evil magical entities. Recognizing this reservation in beliefs in negative entities and events, future research could investigate the extent to which children believe in superstitions that result in bad

luck. This researcher did not address children's beliefs in bad luck, but the question of whether children have different beliefs in good versus bad luck is an interesting one to examine.

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Appendix A

Letter of Approval from Western Kentucky University's Human Subjects Review Board

WESTERN KENTUCKY UNIVERSITY
Human Subjects Review Board
Office of Sponsored Programs
104 Foundation Building
270-745-4652; Fax 270-745-4211
E-mail: Phillip.Myers@Wku.Edu

In future correspondence please refer to HS01-78, Amendment 1, February 8, 2002

Dr. Katrina Phelps
Department of Psychology
WKU

Dear Katrina:

1. Your research project, "Young children's understanding of superstitions," was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

2. In addition, the IRB found that: (1) informed consent will be sought and documented from each prospective subject. (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

   a. Your research therefore meets the criteria of **Expedited Review** and is **approved as Amendment 1 to the original application (HS01-78).**

3. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Kindest regards.

Sincerely,

Phillip E. Myers, Ph.D.
Director, Office of Sponsored Programs and
Human Subjects Coordinator

c: Human Subjects File01-78 Amendment 1

HSApprovalPhelpsHS01-78 Amendment 1

Appendix B

Belief Interview Protocol

Appendix B

BELIEF INTERVIEW

Subject # _____ Location _____
Birth date _____ Exp. Initials _____

Hi. My name is _____. What is your name? That's a nice name. Today I have a game to play with you. And in this game I'm going to ask you some questions and show you some pictures. The fun part of this is that there are no right or wrong answers. It's not like a test, so you can say anything that you want. Okay? Alright, here we go....

1. Do you know what a superstition or a saying about luck is?
   Yes_____ No_____ Other_____

2. Can you explain what it is to me?

_____

_____

3. What would be an example of a saying about something that brings good or bad luck?

_____

_____

3a. Do you believe that is true? Yes_____ No_____ D/k_____
3b. Has it ever happened to you? (Have you ever done that?)
Yes_____ No_____ D/k_____
3c. Did it really work? Yes_____ No_____ D/k_____

**** 4) IF NO RESPONSE TO QUESTION 1, ASK: What about "Step on a crack, break your mother's back."
4a. Have you ever heard of that saying? Yes_____ No_____ D/k_____
4b.. Do you think that is true? Yes_____ No_____ D/k_____
4c. Have you ever done that? Yes_____ No_____ D/k_____
4d. Did it really work? Yes_____ No_____ D/k_____

5) What about "Find a penny, pick it up; all day long you'll have good luck."
5a. Have you ever heard of that saying? Yes_____ No_____ D/k_____
5b. Do you think that is true? Yes_____ No_____ D/k_____
5c. Have you ever done that? Yes_____ No_____ D/k_____
5d. Did it really work? Yes_____ No_____ D/k_____

6) Can you think of any other special beliefs or sayings that bring good luck or bad luck?

6a. Do you believe that is true? Yes_____ No_____ D/k_____
6b. Has it ever happened to you? (Have you ever done that?)
Yes_____ No_____ D/k_____
6c. Did it really work? Yes_____ No_____ D/k_____
6d. Do you believe that is true? Yes_____ No_____ D/k_____

**** 7) Do you think there is really such a thing as luck—having good luck or bad luck?
Yes_____ No_____ D/k_____

8) What are some examples of things that might happen if you have good luck?

9) What are some examples of things that might happen if you have bad luck?

10) Can anyone have good luck? Yes_____ No_____ D/k_____

11) Do some people have more good luck than other people, or is it even? Who?
More_____ Even_____ D/k_____

12) What do you have to do to get good luck? _____

13) Can anyone have bad luck? Yes_____ No_____ D/k_____

14) Do some people have more bad luck than other people, or is it even? Who?
More_____ Even_____ D/k_____

15)What do you have to do to get bad luck? _____

16)Have you ever heard of four leaf clovers bringing good luck? Do you think it really works? What about .....

16a. four leaf clovers
Heard of it____ Works: Yes____ No____ D/K ____
16b. rubbing a rabbit's foot
Heard of it____ Works: Yes____ No____ D/k____
16c. knocking on wood
Heard of it____ Works: Yes____ No____ D/k____
16d. a pencil
Heard of it____ Works: Yes____ No____ D/k____
16e. crossing your fingers
Heard of it____ Works: Yes____ No____ D/k____
16f. a horse shoe
Heard of it____ Works: Yes____ No____ D/k____
16g. the number 7
Heard of it____ Works: Yes____ No____ D/k____

17) Have you ever heard of breaking a mirror bringing bad luck? Do you think it really works? What about .....

17a. breaking a mirror
Heard of it____ Works: Yes____ No____ D/k____

17b. stepping on a spider
Heard of it____ Works: Yes____ No____ D/k____

17c. walking under a ladder
Heard of it____ Works: Yes____ No____ D/k____

17d. black cat crossing path
Heard of it____ Works: Yes____ No____ D/k____

17e. touching a window
Heard of it____ Works: Yes____ No____ D/k____

17f. spilling salt
Heard of it____ Works: Yes____ No____ D/k____

17g. the number 13
Heard of it____ Works: Yes____ No____ D/k____

18) Do special beliefs or sayings for luck always come true, or just some of the time?

Always_____ Sometimes_____ D/k_____

19) Do you have to really believe it will work for it to come true?
Yes____ No____ D/k____

20) When special beliefs come true, is it because somebody does something to make it come true, or because it just happens? Makes it _____
Just happens_____ D/k _____

20a. (If someone) Who does something to make it come true?

_____

21) Who knows about special sayings for good or bad luck?

21a. Do kids know about them? Yes___ No___ D/k_____
21b. Do grown-ups know about them? Yes___ No___ D/k_____
21c. Do babies know about them? Yes___ No___ D/k_____
21d. Do cats and dogs know about them? Yes___ No___ D/k_____
21e. Do flowers know about them? Yes___ No___ D/k_____
21f. Do tables know about them? Yes___ No___ D/k_____

22) Who believes that sayings for luck really come true?

22a. Do kids believe they come true? Yes___ No___ D/k__
22b. Do grown-ups believe they come true? Yes___ No___ D/k__
22c. Do babies believe they come true? Yes___ No___ D/k__
22d. Do cats and dogs believe they come true? Yes___ No___ D/k__
22e. Do flowers believe they come true? Yes___ No___ D/k__
22f. Do tables believe they come true? Yes___ No___ D/k__

Appendix C

Belief Task Protocol

Appendix C

BELIEF TASK

Subject # _____ Location _____
Birth date _____ Exp. Initials _____

_____ 1. Juanita – no belief/action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 2. Holly – belief/no action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 3. Tony – belief/action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 4. Darren – no belief/no action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 5. Amanda – no belief/action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 6. Miriam – belief/action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 7. Riley – belief/no action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 8. Malcolm – no belief/no action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K

Q3. Really happen? Yes No Maybe D/K

_____ 9. Yolanda – belief/no action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 10. Sarah – no belief/no action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 11. David – belief/action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen? Yes No Maybe D/K

_____ 12. Erik – no belief/action
Q1. Believe? Yes No Maybe D/K
Q2. Action? Yes No Maybe D/K
Q3. Really happen Yes No Maybe D/K

Appendix D

Belief Task Stimuli Text

Appendix D

TEXT TO ACCOMPANY THE PENNY PICTURES:

1) no belief, action

This is Juanita. She is sitting on a bench.

Juanita sees a penny on heads. She does not believe that picking up a penny on heads will bring good luck.

She reaches down and picks up the penny, anyway.

2) belief, no action

This is Holly. She is going to school.

Holly sees a penny on heads. She believes that picking up a penny on heads will bring good luck.

She has to go, so she does not pick up the penny.

3) belief, action

This is Tony. He is walking to the park.

Tony sees a penny on heads. He believes that picking up a penny on heads will bring good luck.

He walks over to the penny and picks it up.

4) no belief, no action

This is Darren. He is going to his friend's house.

Darren sees a penny on heads. He does not believe that picking up a penny on heads will bring good luck.

He walks away from the penny without picking it up.

TEXT TO ACCOMPANY THE FOUR LEAF CLOVER PICTURES:

1) no belief, action

This is Amanda. She is sitting on a grassy hill.

Amanda sees a four-leaf clover. She does not believe that picking a four leaf clover will bring good luck.

She reaches down and picks the clover, anyway.

2) **belief, action**

This is Miriam. She is playing in her backyard.

Miriam sees a four-leaf clover. She believes that picking a four leaf clover will bring good luck.

She picks the clover from the grass.

3) **belief, no action**

This is Riley. He is going to his piano lesson.

Riley sees a four-leaf clover. He believes that picking a four leaf clover will bring good luck.

He has to hurry, so he does not pick the clover.

4) **no belief, no action**

This is Malcolm. He is walking his dog.

Malcolm sees a four-leaf clover. He does not believe that picking a four leaf clover will bring good luck.

He does not stop to pick the clover.

TEXT TO ACCOMPANY THE CROSSING FINGERS PICTURES:

1) **belief, no action**

This is Yolanda. She is going camping.

Yolanda hopes it will be nice weather. She believes that crossing her fingers will bring good luck.

Her hands are full, so she does not cross her fingers.

2) no belief, no action

This is Sarah. She is in her classroom at school.

Sarah hopes her spelling test will be easy. She does not believe that crossing her fingers will bring good luck.

She does not cross her fingers before the test.

3) belief, action

This is David. He is waiting for the bus.

David hopes his friend will save him a seat. He believes that crossing his fingers will bring good luck.

He crosses his fingers as he waits for the bus.

4) no belief, action

This is Erik. He is looking at his mailbox.

Erik hopes there will be a letter for him today. He does not believe that crossing his fingers will bring good luck.

He crosses his fingers, anyway.

Appendix E

Informed Consent Document

Department of Psychology
270-745-2695

WESTERN KENTUCKY UNIVERSITY

Western Kentucky University
1 Big Red Way
Bowling Green, KY 42101-3576

Participant Consent Form

Dear Parents,

Your child is invited to participate in a study of children's understanding of beliefs. This study is being conducted by Dr. Katrina Phelps of Western Kentucky University in cooperation with your child's school. The aim of our study is to better understand how children reason about the effects of beliefs on behavior and real world outcomes. We will compare the responses children provide across different ages to learn about changes in children's understanding of beliefs across development. This project will be conducted in a single 20-minute session at your child's school, at a time arranged with your child's teacher. We will coordinate the session with your child's teacher so that your child will not miss any important learning activities.

During the session, your child will be interviewed individually and shown a set of pictures to evaluate and sort. Various questions about beliefs and actions related to good luck and bad luck will be asked; your child's answers will be recorded and kept confidential by our research staff. Your child is free to discuss the interview with you, but we ask children not to discuss their answers with their classmates. We also will show children a series of drawings of boys and girls who are engaged in behavior that may bring them good luck or bad luck. We will ask your child several simple questions about each story and ask them to sort the pictures into piles. Children are told that there are no right or wrong answers to these questions and to just say whatever they think. Our experience has been that children find our interview and picture tasks to be enjoyable and many ask when they can do it again.

We would like to emphasize that your child's participation in this project is entirely voluntary. If you or your child decide not to participate, there will be no negative consequence of any sort for you or your child. Your child may refuse to answer any question and may withdraw from the study at any time. All information collected in this study will be kept strictly confidential and will only be accessible to the project staff. All results will be reported in terms of group averages, and no children will ever be identified by name. A written report of the group results will be available to you at your child's school upon completion of the study.

The procedures in this study have been reviewed and approved by the Western Kentucky University Committee for the Protection of Human Research Participants. The University has filed a form entitled "Assurance of Compliance with DHHS regulations for the Protection of Human Subjects" with the Department of Health and Human Services. Specific questions about this study may be directed to Dr. Katrina Phelps at (270) 745-4311. Feel free to call if you have any concerns; we will be happy to provide you with further information.

We hope that you will allow your child to participate in our study. We promise to make it a pleasant experience and to schedule our sessions in cooperation with your child's teacher. Please fill out your child's name and date of birth, and your child's teacher's name below. To indicate consent, sign your name, and fill in the date at the bottom of the form. When your child returns this letter to the teacher, regardless of whether you respond yes or no, your child will receive a Western Kentucky University "Big Red" pencil.

Thank you for your assistance.

Sincerely.

Katrina Phelps

Katrina Phelps, Ph.D.
Assistant Professor

Western Kentucky University

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Child's name: _____ Date of birth: _____

Teacher's name: _____

_____ No. I do not give my consent for my child to participate in this study.

_____ Yes. I have read the information provide about this study, and give my consent for my child to participate in the individual interviews that are a part of the study conducted by Dr. Katrina Phelps of Western Kentucky University. I understand that I may withdraw my child from the study at any time without penalty.

Parent's signature: _____ Date: _____